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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,301	12/30/2003	Xing Su	INTEL1240 (P16229)	1668

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EXAMINER

YU, MELANIE J

ART UNIT PAPER NUMBER

1641

DATE MAILED: 05/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/750,301

Applicant(s)

SU ET AL.

Examiner

Melanie Yu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 13-32 and 35-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 33 and 34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

RD

DETAILED ACTION

Status of the Claims

1. Applicant's amendment filed 21 March 2005 has been entered. Claim 1 is currently amended, claims 13-32 and 35-40 have been withdrawn. Claims 41-93 have been canceled. Claims 1-40 are currently pending in this application.

Election/Restrictions

2. Applicant's election with traverse of group I, claims 1-12, 33 and 34 in the reply filed on 21 March 2005 is acknowledged. The traversal is on the ground(s) that the gel matrix has not been recited as usable in materially different processes. This is not found persuasive because as discussed in paragraph 3 on page 3 of the office action dated 3 December 2004, the gel matrix is recited as usable in the materially different processes of groups III or IV, which are recited as materially different in paragraph 5 on page 3 of the same office action. It is noted that group I and groups III and IV are related in paragraph 3, not group I and groups II and III as originally stated. Applicant further traverses the restriction on the grounds that search and examination of group I with groups II and III would not constitute undue burden. However, the search of groups II and III would require different search terms to search a method of making and a method of using. Furthermore, the search for a product, method of making and method of using a product would not encompass each other because as stated in the office action dated 21 March 2005, the product can be made and used in materially different processes. Therefore, a search for the product would not encompass a search for a method of making or using the product.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-12, 33 and 34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase “separation gel” recited in lines 1 and 2 of claim 1 is vague because it is unclear what limitations are required for the gel to be considered a separation gel. It is unclear whether the analyte present in the gel defines a separation gel.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1, 2, 4, 5, 7-12, 33 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Bruchez et al. (US 2002/0155507).

Bruchez et al. teach a solid gel matrix comprising: a solid, separation gel (polymeric bead is a solid gel, pars. 0194-0196; gel separates semiconductor nanocrystals which are within the matrix in order to encode a plurality of beads, pars. 0193, 0194, 0205) and one or more SERS-enhancing nanoparticles contained in the separation gel (par. 0015; SCNCs are coupled to a member of a binding pair and attaches to a bead through another binding pair, par. 0201) with an attached probe that binds specifically to an analyte (par. 0110; par. 0126; SCNCs are attached coupled to beads through binding pair members, par. 0201). While Bruchez et al. only describes a specific molecule being conjugated with a semiconductor nanocrystal (SCNC), it is noted that

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Bruchez et al. teach that SCNCs may also be light-scattering metallic nanoparticles (par. 0083), therefore specific molecules may also be conjugated to a SERS-enhancing nanoparticle.

Bruchez et al. teach a plurality of nanoparticles to provide a plurality of unique optical signatures (par. 0051, par. 0193), wherein each nanoparticle provides a unique SERS-signal (par. 0015, par. 0016, par. 0133). Bruchez et al. also teach at least one nanoparticle having a net charge (par. 0278).

Regarding claims 7-12, Bruchez et al. teach the nanoparticle comprising a core comprising a metallic colloid (par. 0083, par. 0084, par. 0051), a second metal different from the first metal forming a layer overlying the surface of the nanoparticle (par. 0083), and an organic layer overlying the metal layer, which organic layer comprising a probe (par. 0110), wherein the probe is a polynucleotide (par. 0061, par. 0069, par. 0127). Bruchez et al. also teach at least some of the nanoparticles further comprising a fluorescent label that contributes to the optical signature (par. 0084).

Regarding claims 33 and 34, Bruchez et al. teach a system comprising: a gel matrix, disclosed above, a sample containing at least one analyte (par. 0134), an optical detection system suitable for detecting SERS signals from the nanoparticles (par. 0214), and a computer comprising an algorithm for analysis of the SERS signals obtained from the sample (par. 0172, par. 0186).

Claim Rejections - 35 USC § 103

5. Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bruchez et al. (US 2002/0155507) in view of Mirkin et al. (US 2003/0211488).

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Bruchez et al., as disclosed above, teach a solid gel matrix wherein the SERS enhancing nanoparticles comprise one or more Raman-active tags (par. 0125), but fail to teach the specific tag.

Mirkin et al. teach a Raman-active tag being an analog of adenine, poly-adenine (par. 0181) or fluorescent dyes (par. 0142), in order to utilize a spectroscopic fingerprint in detection.

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include in the solid gel matrix of Bruchez et al., Raman active tags of an analog of adenine or a fluorescent dye, in order to create distinguishable labels.

Response to Arguments

6. Applicant's arguments filed 21 March 2005 have been fully considered but they are not persuasive. Applicant argues the rejection of claims 1, 2, 4, 5, 7-11, 33 and 34 under 35 USC 102(b) because Bruchez et al. does not teach a separation gel. However, this phrase has not been clearly defined, and it is unclear what a separation gel encompasses. Furthermore, Bruchez et al. teach SCNCs attached to a bead which is a solid matrix through a specific binding member. Therefore Bruchez et al. teach a separation gel for the separation of SCNCs from a plurality of SCNCs by binding a single SCNC to a specific binding member on a solid matrix bead (par. 0013; par. 0201). Applicant further argues that Bruchez et al. fail to teach a separation gel or gel suitable for separation of biomolecules within the gel by electrophoresis or magnetophoresis. However, these limitations are not present in the claim and are therefore not required of the separation gel.

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7. Applicant also argues the rejection of claims 3 and 5 under 35 USC 103(a) because Bruchez et al. does not separation gel. However, for reasons stated above, Bruchez et al. teaches the separation of SCNCs by the beads made from gel.

Conclusion

No claims are allowed.

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie Yu whose telephone number is (571) 272-2933. The examiner can normally be reached on M-F 8:30-5.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on (571) 272-0823. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Melanie Yu
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05/12/05